



EIS000869

Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste

Comment Sheet

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JAN 20 2000

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Comments: (If possible, please reference section number and/or page number in document if applicable.)

1 I am a Registered Nurse, with twenty five years of experience in healing and caring for the sick and injured. I currently work in a Cardiac Catheterization Laboratory using radiation on a daily basis. I have chosen to be exposed to radiation, through my work, but utilize lead aprons, lead glasses and monitoring devices to limit and monitor my exposure. I am very concerned regarding the Yucca Mountain project and the radiation exposures to an unaware, unprotected and un-monitored public through the planned transportation across the nation of highly radioactive nuclear waste. In reading the Draft Environmental Impact Statement Summary, I have found many issues that have disturbed me greatly and have enclosed my concerns in this letter. If I may be of any further assistance, please feel free to contact me.

Please note: For your comment(s) to be considered in the Final Environmental Impact Statement, your comment(s) need to be received by the Department of Energy by February 9, 2000. To the extent practicable the Department will consider comments received after February 9.

Please feel free to attach additional pages; more postage may be needed. If you prefer to mail your comments, you may use the back side of this sheet as a postage-paid, self-mailer. To do so, fold in thirds along the dotted line so address and postage-paid notice are visible; then secure with tape.

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Regarding the Yucca Mountain Nuclear Waste Repository, the most notable statement is in the draft Environmental Impact Statement Summary, section S.4, page S 30, second paragraph, "Further, the complexity and variability of the natural system at Yucca Mountain, the long period evaluated (10,000 years), and incomplete information or the unavailability of some information have resulted in uncertainty in the analyses and findings". No one knows what earth or environmental changes will occur anywhere in ten thousand years or even ten years. There is no society that has survived for ten thousand years. The pyramids were built approximately 5,000 years ago and we are just, in the last fifty years, starting to decipher the hieroglyphics. We still do not understand what happened to their society, or to the Mayans, or the Celts, or to any other advanced civilization, all of which have vanished.

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My brothers and I were born and raised in the Las Vegas valley during the above and below ground testing of atomic bombs at the Nevada Test Site. One of my half-brothers and myself have suffered from melanoma, one brother has vitiligo. My half-brother, who was raised in southern California, has suffered no such medical problems. There is no family history of any similar medical conditions. I do not know if any of these medical problems are related to the testing at the Nevada Test Site, but I am very aware of the high incidence of cancers among down-winders in southern Utah. I am also aware of the continuing possibility of nuclear contamination of air, land, table and surface water in and around the Nevada Test Site. There are also continuing questions as to land and earth fracture stability secondary to nuclear testing near existing fault lines.

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We are dealing with an industry less than fifty years old, a technology in its infancy. At the present time we do not fully understand all possible hazards, benefits and potentials associated with nuclear energy, waste and this natural resource. Within the next ten to fifty years, we may have the knowledge and

5 cont. ability to profitably utilize or recycle our current waste. It seems very premature to offer three immediate, poorly viable solutions to a problem that is so complex and potentially so hazardous at this time. Breeder reactors, fusion technology or recycling offer potential present and future use of our current waste products.

6 The transportation of highly radioactive material across the country jeopardizes tens of millions of American citizens. The potential for accidents and resultant exposure to Good Samaritans, emergency responders and the lack of qualified, trained Haz Mat teams capable of rapid response to an emergency situation of this magnitude and trained for nuclear exposures, puts millions of unwitting Americans at risk.

7 The site at Yucca Mountain is very precarious due to the increasing number and severity of earthquakes in the southern California, southern Nevada and even Yucca Mountain areas. Regarding S.4.1.3 Geology, in the draft Environmental Impact Statement, paragraph 4 on page S-37 states that the 5.6 earthquake in 1992 caused no detectable damage...at the Yucca Mountain site. This is a false statement as there was significant damage to some buildings at the Yucca Mountain site. If one of those buildings had been the nuclear waste transfer area, it could have the potential to create a nuclear nightmare for surrounding communities including southern Nevada, southern Utah and possibly, areas of southern California. At the present time, these are relatively low populated areas, but all the potentially effected areas are experiencing phenomenal growth in population and tourism. The draft summary repeatedly references a population of about 28,000 within 80 kilometers (50 miles) of the Yucca Mountain site. However, when the population within 100 miles of the Yucca Mountain site is considered, as it should be, the number of population would increase dramatically. If there were an accidental exposure via air or water, it would definitely impact many more people than the 50 mile radius claims. Paragraphs one and two of S.4.1.3, Geology, address the lack of

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9 cont. *volcanic activity in the area. The Cascade mountain range was inactive until Mount St. Helens erupted in May, 1980. There has also been increased volcanic activity worldwide. The assurances of "the chance of volcanic disruption...during the first 10,000 years after closure would be 1 in 7,000" are probably similar to what residents of Mount St. Helens were told for years prior to the eruption. I believe that these are misleading numbers and assumptions on the geology of the Yucca Mountain area.*

10 *Regarding S.3.1.2, paragraph seven, there is no recommendation as to which thermal load scenario is planned. I appreciate the attempts made to protect workers by creating a negative pressure gradient on the emplacement side thus venting radon and any other exposures away from workers, on the development side, and into the nuclear waste emplacement area. My concern is that these contaminants will be vented from the emplacement areas, with the heat from the thermal load, whichever scenario is utilized, via the exhaust ventilation into the air to drift with the winds. Any radiation leak, in any canister, would also be vented away reminiscent of the above ground bomb testing, at the Nevada Test Site, to effect the down-winders.*

8 *Regarding S.4.1.2, referencing radiological and non-radiological impacts, the dust suppression techniques used during excavation, i.e. water spraying, could lead to faster and higher levels of water contamination. With the low humidity in the desert area, it could also vaporize and increase air contamination.*

11... *The highest radiation risk to the public is stated as being caused by Radon-222. There has never been, in the history of mankind, so much radioactive material in one site as is proposed for Yucca Mountain. We have seen what happened at Three Mile Island in 1979, Chernobyl in 1986, and just recently in Japan with markedly lower amounts of radioactive material. The numbers quoted for an accident in S.4.1.9, paragraph two, are optimistic at best. Paragraph three sums up this issue, "In any event, because of the large*

11 cont. quantities of radioactive material, radiological considerations would outweigh non-
 12 radiological concerns under most accident conditions". The report does not address
 non-malignant radiological effects to exposed populations, including degenerative
 changes and impaired function of blood vessels, bone marrow, kidneys, lungs,
 thyroid, eyes, reproductive organs and genetic structure. Doses of as little as 150
 rads have been known to cause death within four to six weeks. Even doses less than
 150 rads will cause degenerative changes in multiple organ systems.

36 [S.4.1.12, paragraph four, compares fossil fuel usage, during the
 emplacement and development, to the 1996 use of same in Clark, Lincoln and
 Nye counties. Since these counties are considered to be in near enough proximity
 to be used in this comparison, why aren't all these populations also considered as
 part of the at risk population. The Draft Environmental Impact Statement
 Summary repeatedly refers to a 50 mile exposure area. At the present time,
 these are sparsely populated areas with high growth in resident and tourist
 populations. If the exposure area is expanded to a 100 mile distance, as is more
 practical, the population, exposure and latent cancer fatality numbers quoted in
 this summary are all flawed due to the exponential increase in population. The
 Chernobyl accident required evacuation of a 1,000 mile radius and still caused
 13 many early deaths. Birth defects and deaths in the area continue. Paragraph two
 discusses the need for additional electrical power delivery to the Yucca Mountain
 site. With the heat being generated by the stored nuclear waste, why would there
 be a need for increased electrical power delivery. The excess heat units should be
 utilized for development of electrical energy instead of increasing electrical
 14 requirements. There is no indication of the estimated number of thermal units to
 be released into the atmosphere and surrounding environment and what impact it
 15 may have on the climate and eco-systems of the area. Paragraph six addresses the
 development of an emergency services team to respond to an accident at the
 repository but does not address transfer station or transport situations which would

15 cont. involve more members of the public. There are no public Haz Mat teams available qualified to intervene in a nuclear situation. This again appears to be a situation where the DOE is more concerned with its own employees than with the American population.

16 S.4.1.13, paragraph one, states that the DOE would use less than 3 percent of the existing off-site capacity for low-level radioactive waste disposal, but does not identify the location or mode of transport to be utilized. If, as I assume, the location is at the Nevada Test Site, are they going to be allowed access to this area since paragraph S.4.2.2 states that the Nevada Test Site strongly opposes transport via the Caliente-Chalk Mountain route citing security and operations interference.

17 S.4.1.15 and S.4.2.1, paragraph concern sabotage. Both treat the potential for sabotage as unlikely and the result to be minimal. I believe that the potential for is very high. It would be a target with more nuclear material present than has ever been stored in one location before. I believe that a foreign power, disgruntled worker, or any political extremist would view a nuclear repository, transfer station, or transport modality as an ideal and ultimate target. It would not have to be for nuclear material for warhead making but could also be targeted for wreaking havoc as it is sure to do. The potential impacts could be staggering, making the Holocaust, Hiroshima and Nagasaki pale in comparison.

18 Transportation of nuclear waste would also present additional opportunities for sabotage and terrorist attacks. These attacks potentially could threaten millions of
19 Americans nationwide. Several states have declared themselves nuclear-free zones anticipating the transport of nuclear waste through their states to Yucca Mountain. Their attempts to protect the citizens of their respective states, from the dangers of nuclear waste, possible accidents and/or terrorism and sabotage, are being ignored by the Department of Energy. Again the National Transportation impacts are optimistic, at best.

20... *S.4.2.2 does not specify a preferred method or route of transportation.*
 21 *Paragraph three involves an intermodal transfer station. Caliente and Jean are both located near existing or planned correctional facilities. Any radiation exposure, intentional or accidental, to employee or inmate populations of these facilities could result in cruel and unusual punishment and potentially skyrocketing legal costs for the counties, state and federal governments.*
 22 *There is an obvious impact to poor and disadvantaged and to minorities with all documented transportation routes. The intermodal transportation sites are located in poor, under-educated, rural counties in Nevada and would attract these poor, for steady work with good pay, regardless of the dangers involved. The Native Americans strongly oppose nuclear waste on their land. This includes the Western Shoshone nation which claims the Nevada Test Site and Yucca Mountain as their land per the Ruby Valley Treaty of 1863. This land dispute has not been resolved to date and obviously will impact the Native American minority of Western Shoshone. Since most routes travel near or through the Moapa and/or Las Vegas Paiute Indian reservations, it would again disproportionately impact the poor and disadvantaged minorities.*
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 25 *S.5.1 addresses the no-action alternative and the resultant loss of approximately 4,700 jobs. Those jobs would be lost at the end of the construction and storage period and would only be terminated at a sooner period with the no-action alternative. The importance of Native American resources and sites being preserved is an important issue. The integrity of archeological sites and resources has been maintained for hundreds of years without government intervention and would probably continue unscathed without government interference. The no-action scenarios addressed are non-viable for long term storage of nuclear waste as are the proposed actions at Yucca Mountain.*
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 28... *S.6, Cumulative Impacts of the Proposed Action, states that the "DOE could not reasonably predict future actions for the indefinite future. For*

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that reason, DOE did not attempt to estimate cumulative impacts beyond about 100 years...". I am not familiar with any person or agency that would have the ability to predict any future 10,000 years away. It is this extraordinary time period that is a major issue with all the alternatives presented in the Draft Environmental Impact Statement.

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S.6.1, Occupational and Public Health and Safety, Radiological Impacts to Workers compares fatalities under Module 1 or 2 to fatalities under the Proposed Action. There is not a time frame mentioned in this paragraph. Considering that the previous paragraph, has half the deaths mentioned in paragraph two, occurring in the first 100 years of repository operations, I am led to assume that the second paragraph is addressing the first 200 years. The Long-Term Radiological Impacts to public health occur from radionuclides ultimately from Yucca Mountain, past weapons testing on the Nevada Test Site, and past, present, and future disposal of radioactive waste on the Nevada Test Site and near Beatty, Nevada. The cumulative impacts from radionuclides released to groundwater are estimated at less than about 0.003 latent cancer fatality over 10,000 years. Again, I must assume that this is an ideal scenario without earthquakes, flooding, heavy rains or other natural disasters which have been known to occur in this area. It also does not address non-fatal radiological effects. Radionuclides released to the air, land, dust, or other exposures are not addressed as long-term radiological impacts. Perhaps this was an oversight or perhaps it was intentionally omitted. It is an aspect that requires due diligence as the down-winders in Southern Utah can attest.

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S.6.3, Transportation, estimates implementation of the Proposed Action, and transportation of radioactive nuclear materials to result in 310 - 354 latent cancer fatalities. This emplacement period is an approximate 25 year time span. So this is estimating over 12 latent cancer fatalities, to worker and the public populations, per year just from transportation of radioactive nuclear materials.

30 cont. *This is an unbelievably high number just from transportation and it is unrealistic*
to assume that the storage would result in less injuries, deaths and latent cancer
 20 cont. *fatalities.* It is not documented, anywhere throughout this environmental impact
statement, what the preferred or planned mode or routes would be. The members
of the public in the one-half mile at-risk transportation corridor have not been
advised that they will be subjected to nuclear exposure by transportation of this
nuclear waste. They will be at extreme risk as per the DOE statements and
have a right to be advised and to have input regarding their risk.

31... S.9, Unavoidable Adverse Impacts, lists multiple reasons that the
repository should not be built at the Yucca Mountain site, not the least of which
are the Native American tribes effected. The Paiute, Moapa and Western
Shoshone native-American people deserve a weighted opinion in this matter.
This is native land that has been in the care and custody of these people for many
 32 *generations, often after being forced out of their native lands.* Groundwater
contamination at the site could have devastating ramifications for the livestock and
agricultural communities surrounding the area, specifically the Amargosa
 33 *Valley.* Groundwater contamination has already occurred at the Nevada Test
Site and is reaching the borders of the Test site. It is possible that it may have
already contaminated ground water in Beatty, Western Shoshone land, and in
smaller communities surrounding the Nevada Test site. It needs to be kept from
progressing and the contaminated areas from becoming larger.

34 S.11, Findings, comparing the No-Action Alternative with the
Proposed Action demonstrates markedly reduced latent cancer fatalities with the
No-Action Alternative. It also demonstrates no environmental impacts, no
groundwater contamination and no impact on the Native American populations
 31 cont. *with the No-Action Alternative.* S.11.2, Areas of Controversy, the Native
American issues of the inter-relation of plants, animals, air, land and water are
currently termed eco-systems and ecology and must be addressed satisfactorily.

31 cont. *This draft Environmental Impact Statement Summary does not. Regarding the Native American tribes in the region, especially the Western Shoshone's claim to title to the land, artifacts and holy areas, these issues must be considered*
 35 *and resolved satisfactorily.* Paragraph 2, the unavailability of information and differing interpretations of data, as stated in paragraph two, is a glaring omission throughout this report. Until this information is available and with a consensus of opinion regarding the interpretation of this information, I believe that the Yucca Mountain site should be put on hold.

27 cont. In summary, I believe that the No-Action scenario is non-viable as is the Yucca Mountain site on a long-term basis. It may be better to leave this dilemma to future generations with more advanced technology and ethics to deal with this issue. As little as fifty to one hundred years may make a drastic difference in our ability to re-use, utilize, recycle or dispose of what we now term nuclear waste. In the meantime, the several billion dollars, already spent and planned to be spent, on this ill-conceived project would be better spent in quality research aimed at solving this issue instead of sweeping it under a mountain. It would be better to leave it to future generations than to go full-forward with an ill thought out plan that they will be required to clean up or deal with for the next
 5 cont. ten thousand years. Perhaps the best alternative would be to go back to planning sessions for alternative uses, recycling, breeder reactors or perhaps some other use that we have not yet considered. The above-ground nuclear testing at the Nevada Test Site caused numerous deaths, injuries, birth defects and hazards, because the powers, at that time, felt that it would be all right. We hopefully have learned from the mistakes of the past and have learned not to repeat those same mistakes.

A multi-national task force of nuclear powers and nations effected by nuclear waste and hazards, perhaps moderated by the United Nations, may be the best place to initiate this discussion. Utilizing the best minds, creativity, and

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education of the world, rather than limiting it to our nation alone, may yield some dramatic results. This is a problem for the planet, not just our country, and the populations of the planet should be involved in finding a viable solution. Storage in a mountain created by volcano and situated on active earthquake fault lines for 10,000 years is not a viable solution.

Sue A McHugh RN CCRN